Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Carriage of the Transmissions	)	CS Docket No. 98-120
of Digital Television Broadcast Stations	)	
	)	
Amendments to Part 76	)	
of the Commission's Rules	)	

REPLY COMMENTS OF GENERAL INSTRUMENT CORPORATION

General Instrument Corporation ("GI") submits the following reply comments in response to the Notice of Proposed Rulemaking in the above-captioned proceeding.[1] GI was a member of the Grand Alliance and has been at the forefront in the development of digital television. Currently, GI is working to provide cable subscribers across the nation with the equipment needed to access the variety of services available over upgraded digital cable networks. In both designing products and advocating standards, GI's first and foremost consideration is that consumers benefit from the outcome.

General Instrument is motivated to reply to the comments filed in this proceeding by the National Association of Broadcasters ("NAB"). Specifically, GI addresses Appendix G of the NAB's comments, an attachment entitled, "Technical Issues Surrounding Digital Must Carry." GI believes NAB's attachment requires further discussion with regard to the Program and System Information Protocol ("PSIP") standard and digital interface issues.

DTV Channel Navigation Issues

Broadcasters have perceived different channel navigation needs than those of analog and digital satellite and cable systems. What the NAB fails to address in its comments is that, while broadcasters are just now entering this digital world, many cable operators have been using digital technology for years. Thus, adoption of standards by the broadcast industry which are functionally similar to, yet incompatible with, equipment currently deployed in cable systems will impact millions of consumers already enjoying the benefits of the digital delivery of television signals.

Digital cable systems are based on the System Information protocol ("SI"), known as ATSC A/56.[2] To be fair, it is true that A/56 does not by itself handle two-part channel numbering for grouping of services.[3] But likewise, PSIP, adopted as ATSC A/65, has shortcomings for use by cable operators. For example, NAB stated in its comments that "broadcast PSIP could actually facilitate automatic systems to convert the input PSIP to the cable PSIP."[4] This is not so. PSIP translation is required due to possible multiplexing and rearranging of the multiplex. There is no such thing as automatic conversion. The cable operator would have little choice but to provide this functionality at an added cost for every stream they would like to offer to a consumer with a DTV receiver.

The fact most likely to impact consumers, however, is that SI was adopted and deployed *well in advance* of any effort on PSIP. The ATSC chose to adopt A/65 PSIP knowing it was not backwards compatible with A/56, and thus creating a problem of

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[1] *In the Matter of Carriage of the Transmissions of Digital Television Broadcast Stations, Amendments to Part 76 of the Commission's Rules*, CS Docket No. 98-120, FCC 98-153 (released July 10, 1998).
[2] Subsequently adopted by the Society of Cable Telecommunications Engineers ("SCTE") as DVS-022.
[3] A need perceived by broadcasters and for which consumer acceptance has yet to be determined.

equipment obsolescence for consumers across the country. Today, more than 2.5 million digital television set-top terminals incorporating A/56 have been shipped, along with processing equipment for more than 650 cable TV headends. Any mandate that these cable systems use A/65 PSIP would necessitate the modification or replacement of equipment, introduce significant operational overhead, and delay the deployment of digital television in the cable industry.

General Instrument is working with other companies to solve this problem by creating a protocol that will handle all the additional functions needed by broadcasters and currently provided by PSIP, yet in fact will be backwards compatible with the SI standard. This soon-to-be-proposed standard is based on both A/56 and A/65. It accounts for two-part channel numbering and new content advisory schemes. This proposal will be submitted to the SCTE early in 1999, possibly in January.

There is no question that PSIP was created to fulfill perceived requirements of the broadcasters – requirements that do not exist in any other virtual navigation system (even when multiple signals from one network are present, as, for example, with HBO signals).[5] Principally, the current practice based on A/56 should have been extended by ATSC, but instead ATSC chose to create a functionally similar yet incompatible standard. The Commission's adoption of rules unnecessarily mandating the PSIP standard would be a disservice to consumers and to the many cable system operators who proved their willingness to pioneer the deployment of broadband digital networks. Instead, the Commission should allow industry standards bodies and the market to work through and decide the issue of system information and channel navigation protocols.

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[4] Comments of the NAB, Appendix G at 14.

Digital Interface Issues

The NAB's technical appendix strongly supports the IEEE-1394 standard as the solution to compatibility problems between digital television receivers and cable transmission of digital signals.[6] However, as pointed out by many interested parties who addressed this subject in the first round of comments, 1394 is not necessarily the best interface between digital television receivers and cable set-top terminals.[7] Utilization of 1394 restricts the user's viewing experience based on the limitations of the DTV video decoder / graphics capability. This restriction applies to any device that presents unique graphical functions not supported by the DTV receiver.

As GI stated in its Comments in this proceeding, the development of a standard for interoperability is important. GI intends to provide a family of set-top terminals with models that support all industry interfaces, including eventually 1394 when the aforementioned restrictions no longer exist. The FCC should allow the market to govern the selection of viable standards; mandating 1394 would not be in the best interests of consumers.

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[5] For example, branding does not require two-part channel numbering, but rather is accomplished with a channel branding that is alpha blended at the lower righthand corner of the picture.

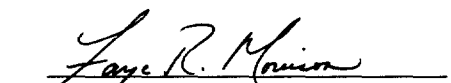
[6] *See* Comments of the NAB, Appendix G at 6-10.

[7] *See, e.g.*, Comments of Zenith Electronics Association at 10 ("Zenith believes there should be marketplace solutions for DTV interfaces. The 1394 interface deserves a place in differentiated, more featured product where it would be useful."); Comments of Thompson Consumer Electronics, Inc. at 3 ("[T]he IEEE 1394 'firewire' standard is one approach to facilitating cable-DTV receiver interoperability, but is not a panacea."); Comments of Microsoft Corporation at 12 ("[The] 1394 connector lacks sufficient bandwidth to pass through baseband 1080i signals by more than a factor of two."); Comments of the Consumers Electronics Manufacturers Association at 18 ("[1394] is by no means the sole method to interconnect digital devices and maintain full functionality."); Comments of Circuit City Stores, Inc. at 9 ("[1394] does not appear to offer a complete solution.); Comments of MediaOne Group, Inc. at 13 ("[I]ndustry efforts are already underway in the...standards-setting arenas that will go a long way toward resolving the technical, consumer, cost and other issues raised in the Notice. Therefore, there is no reason for the Commission to adopt any rules in this area."); Comments of the Association for Maximum Service Television at 42 ("[T]he 1394 'solution' is far from perfect."); and Comments of BellSouth Corporation and BellSouth Interactive Media Services, Inc. at 21 ("[T]he Commission should not assume that 'firewire' is a realistic technical 'fix' for cable overbuilders.").

Conclusion

General Instrument is committed to providing technological solutions that will not result in increased costs to our customers – both cable operators and cable television subscribers – and that will not delay the continued deployment of digital cable systems. The Commission should resist any temptation to mandate standards in this area, and instead should allow the industries involved, through standards-setting organizations, to determine solutions.

Respectfully submitted,



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